HTML Tutorial

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Introduction

HTML stands for **Hyper Text Markup Language**. It is used to design web pages using the **markup language**.

Hyper Text
Hyper Text simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. Hyper Text is a way to link two or more web pages (HTML documents) with each other.

Markup language
A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

Web Page:
A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type. **With the help of HTML only, we can create static web pages**.

What is HTML used for?
HTML is used to create the structure of web pages that are displayed on the World Wide Web (www). It contains Tags and Attributes that are used to design the web pages. Also, we can link multiple pages using Hyperlinks.

Let's see a simple example of HTML.

```
<!DOCTYPE html>
<html>
 <head>
        <title>Page Title</title>
 </head>
 <body>
        <h1>My First Heading</h1>
        <p>My first paragraph. </p>
 </body>
</html>
```
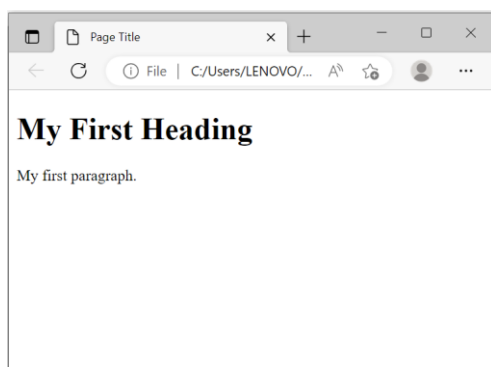
Description of HTML Example

<!DOCTYPE>: It defines the document type or it instruct the browser about the version of HTML.

<html >: This tag informs the browser that it is an HTML document. Text between html tag describes the web document.It is a container for all other elements of HTML except

<!DOCTYPE>

<head>: It should be the first element inside the <html> element, which contains the metadata (information about the document). It must be closed before the body tag opens.

<title>: As its name suggested, it is used to add title of that HTML page which appears at the top of the browser window.

 It must be placed inside the head tag and should close immediately. (Optional)

<body>: Text between body tag describes the body content ofthe page that is visible to the end user. This tag contains the main content of the HTML document.

<h1>: Text between <h1> tag describes the first level headingof the webpage.

An HTML element is defined by a start tag, some content, and an end tag:
<tagname> Content goes here... </tagname>
The HTML element is everything from the start tag to the end tag:
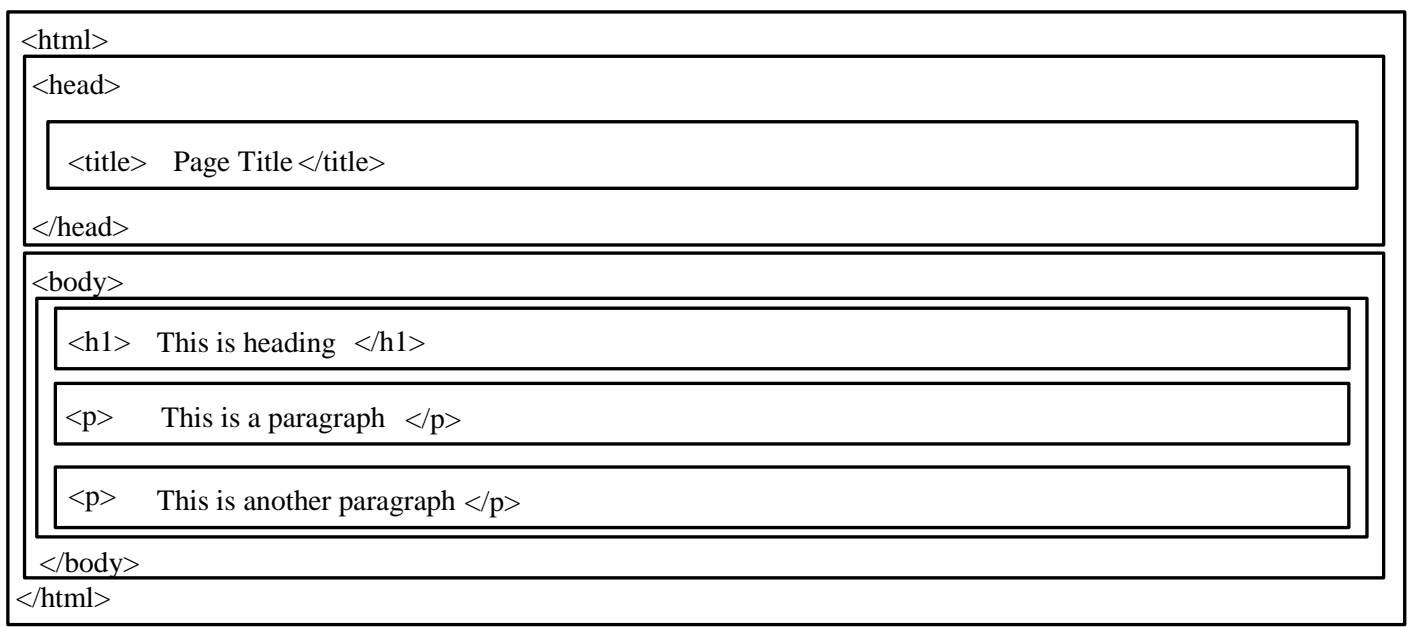<h1>My First Heading</h1>
<p>My first paragraph. </p>

Start Tag	Element Content	End Tag
<h1>	My First Heading	</h1>
<p>	My first paragraph	</p>
 	none	none

HTML Page Structure
Below is a visualization of an HTML page structure:

```
<html>
  <head>

    <title>   Page Title </title>

  </head>

  <body>

    <h1>   This is heading  </h1>

    <p>     This is a paragraph  </p>

    <p>     This is another paragraph </p>

  </body>
</html>
```

Features of HTML

- It is a very **easy and simple language**. It can be easilyunderstood and modified.
- It is very easy to make an **effective presentation** withHTML because it has a lot of formatting tags.
- It is a **markup language**, so it provides a flexible way to design web pages along with the text.
- It facilitates programmers to add a **link** on the web pages (byhtml anchor tag), so it enhances the interest of browsing of theuser.
- It is **platform-independent** because it can be displayed on any platform like Windows, Linux, and Macintosh, etc.
- It facilitates the programmer to add **Graphics, Videos, and Sound** to the web pages which makes it more attractive and interactive.
- HTML is a case-insensitive language, which means we can use tags either in lower-case or upper-case.

HTML Attributes

- HTML attributes are special words which provide additional information about the elements or attributes arethe modifier of the HTML element.
- Each element or tag can have attributes, which defines thebehavior of that element.
- Attributes should always be applied with start tag.
- The Attribute should always be applied with its name andvalue pair.
- The Attributes name and values are case sensitive, and it is recommended by W3C that it should be written in Lowercase only.
- You can add multiple attributes in one HTML element, butneed to give space between two attributes.

The href Attribute

The <a> tag defines a hyperlink. The href attribute specifies the URL of the page the link goes to:

For Ex:

```
<!DOCTYPE html>
<html>
<body>
<h2>The href Attribute</h2>
<p>HTML links are defined with the a tag. The link address is specified in the href
attribute:</p>
        <a href="https://www.google.com">Google</a>
</body>
</html>
```
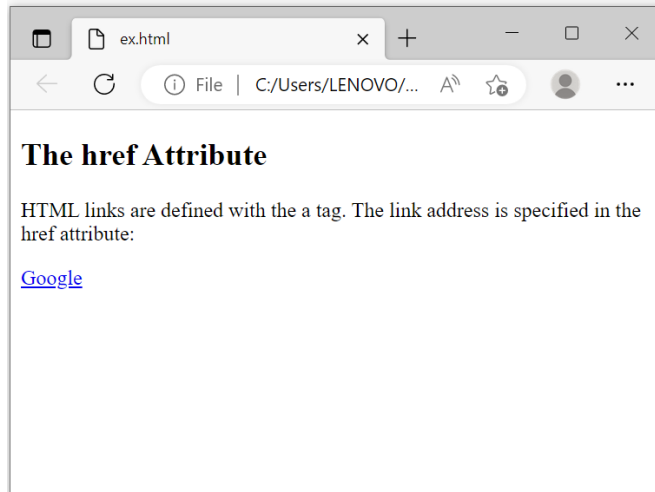
OUTPUT

The Style Attribute
Syntax:
<element attribute_name= "value"**>**content**</element>**
Example
```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<h1> This is Style attribute</h1>
<p style= "height: 50px; color: blue">It will add style property in element</p>
<p style="color: red">It will change the color of content</p>
</body>
</html>
```
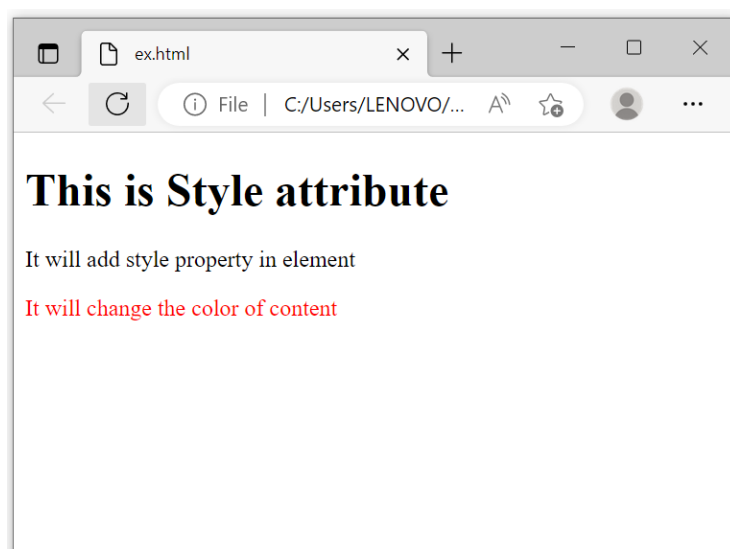**OUTPUT**

The Title Attribute

The title attribute is used as text tooltip in most of the browsers.It displays its text when user move the cursor over a link or anytext. You can use it with any text or link to show the descriptionabout that link or text. In our example, we are taking this with paragraph tag and heading tag.

EXAMPLE

```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<h1 title="This is heading tag">Example of title attribute</h1>
<p title="This is paragraph tag">Move the cursor over the heading and
paragraph, and you will see a description as a tooltip
</p>
</body>
</html>
```
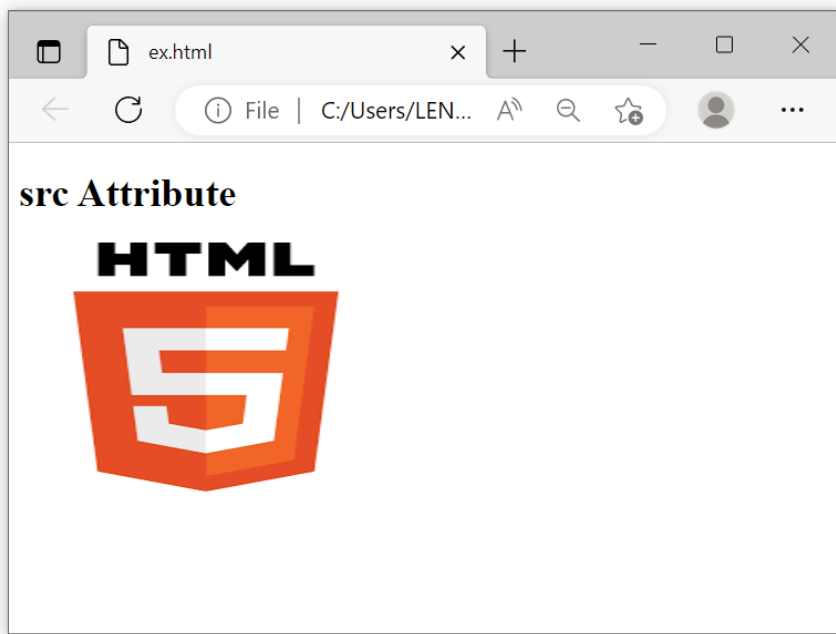
OUTPUT
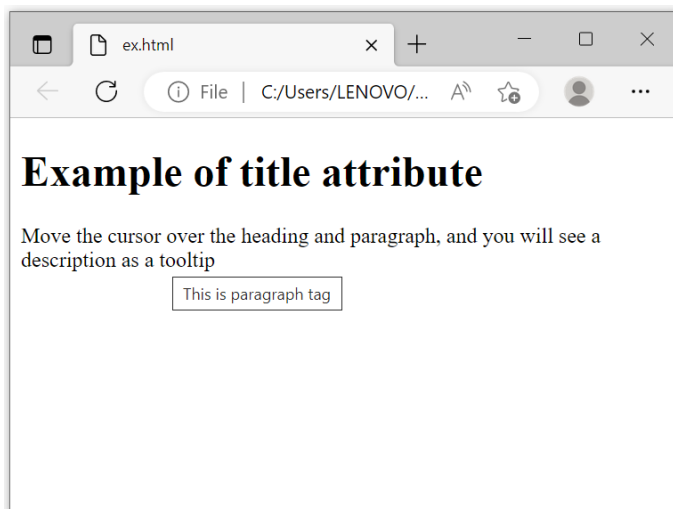
The src Attribute

The src attribute is one of the important and required attribute of <img> element. It is source for the image which is required to display on browser. This attribute can contain image in same directory or another directory. The image name or source should be correct else browser will not display the image.

Example

<img src= "C:\Users\LENOVO\Downloads\htmllogo.png" height="400" width="600"**>**

There are two ways to specify the URL in the src attribute:

1. Absolute URL - Links to an external image that is hosted on another website. Example: src="https://www.google.com/images/img_girl.jpg".

Notes: External images might be under copyright. If you do not get permission to use it, you may be in violation of copyright laws. In addition, you cannot control external images; it can suddenly be removed or changed.

2. Relative URL - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page. Example: src="img_girl.jpg". If the URL begins with a slash, it will be relative to the domain. Example: src="/images/img_girl.jpg".

Tip: It is almost always best to use relative URLs. They will not break if you change domain.

HTML ELEMENTS

An HTML file is made of elements. These elements are responsible for creating web pages and define content in that webpage. An element in HTML usually consists of a start tag
<tag name>, close tag </tag name> and content inserted between them.
Technically, an element is a collection ofstart tag, attributes, end tag, content between them.

Some elements does not have end tag and content, theseelements are termed as empty elements or self-closing element or void elements.

Example
<!DOCTYPE html**>**
<html>
<head>
<title>WebPage**</title>**
</head>
<body>
<h1>This is my first web page**</h1>**
<h2> How it looks? **</h2>**
<p>It looks Nice!!!!!**</p>**
</body>
</html>
 NOTE:All the content written between body elements are visible onweb
 page.
OUTPUT
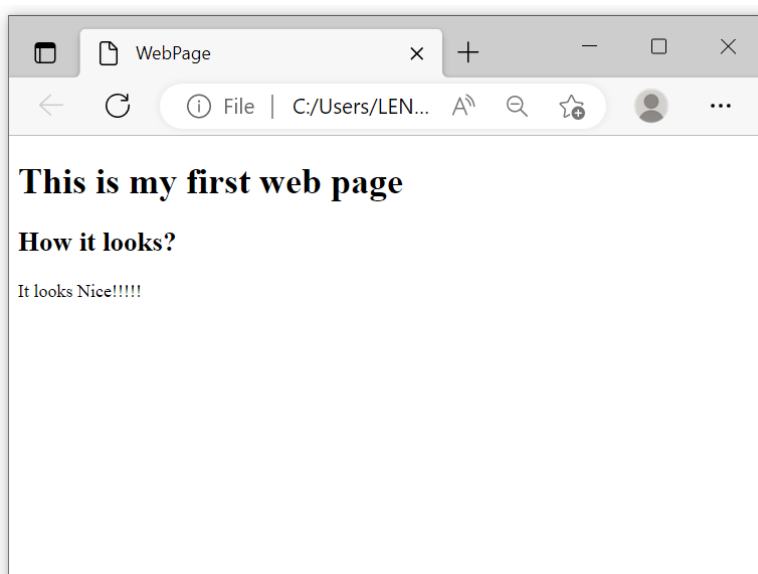
Void element: All the elements in HTML do not require to have start tag and end tag, some elements does not have content and end tag such elements are known as Void elements or empty elements. **These elements are also calledas unpaired tag**.

Some Void elements are
 (represents a line break), <hr>(represents a horizontal line), etc.

Nested HTML Elements: HTML can be nested, whichmeans an element can contain another element.

Block-level and Inline HTML elements

For the default display and styling purpose in HTML, all theelements are divided into two categories:

- Block-level element
- Inline element

Block-level element:

- These are the elements, which structure main part of webpage, by dividing a page into coherent blocks.
- A block-level element always start with new line and takesthe full width of web page, from left to right.
- These elements can contain block-level as well as inlineelements.

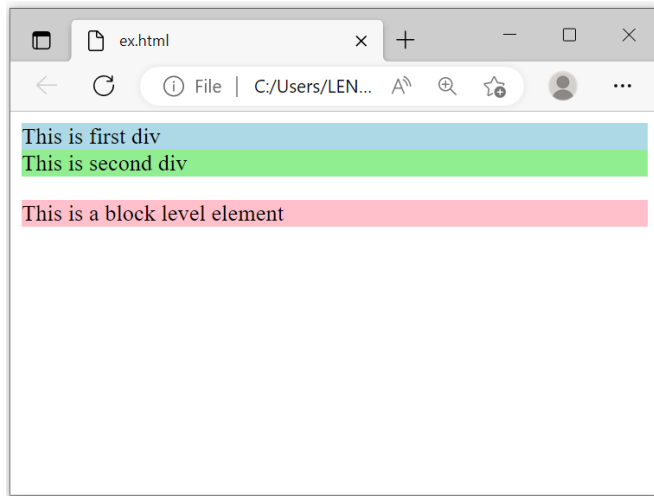Following are the block-level elements in HTML.

<address>, <article>, <aside>, <blockquote>, <canvas>, <dd>,<div>,<dl>,<dt>, <fieldset>,<figcaption>,<figure>,<footer>, <form>, <h1>-<h6>, <header>, <hr>, <li>, <main>,<nav>, <noscript>, <ol>, <output>, <p>, <pre>, <section>,<table>, <tfoot>, <ul> and <video>.

EXAMPLE

```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<div style="background-color: lightblue">This is first div</div>
<div style="background-color: lightgreen">This is second div</div>
<p style="background-color: pink">This is a block level element</p>
</body>
</html>
```

OUTPUT

In the above example we have used
tag, which defines a section in a web page, and takes full width of page.
We have used style attribute which is used to styling the HTML content, and the background color are showing that it's a block level element.
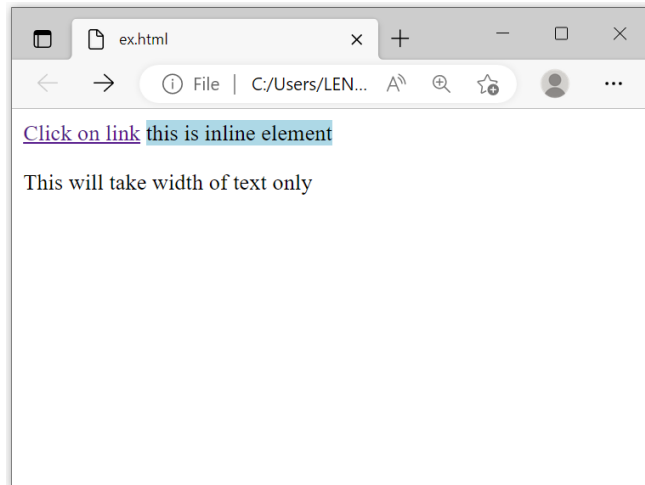
Inline elements:
- Inline elements are those elements, which differentiate thepart of a given text and provide it a particular function.
- These elements does not start with new line and take widthas per requirement.
- The Inline elements are mostly used with other elements.

<a>, <abbr>, <acronym>, <b>, <bdo>, <big>, <br>, <button>,<cite>, <code>, <dfn>, <em>, <i>, <img>, <input>, <kbd>,<label>, <map>, <object>, <q>, <samp>, <script>, <select>,<small>, <span>, <strong>, <sub>, <sup>, <textarea>, <time>, <tt>, <var>.

EXAMPLE
```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<a href="https://www.google.com/htmltutorial">Click on link</a>
<span style="background-color: lightblue">this is inline element</span>
<p>This will take width of text only</p>
</body>
</html>
```
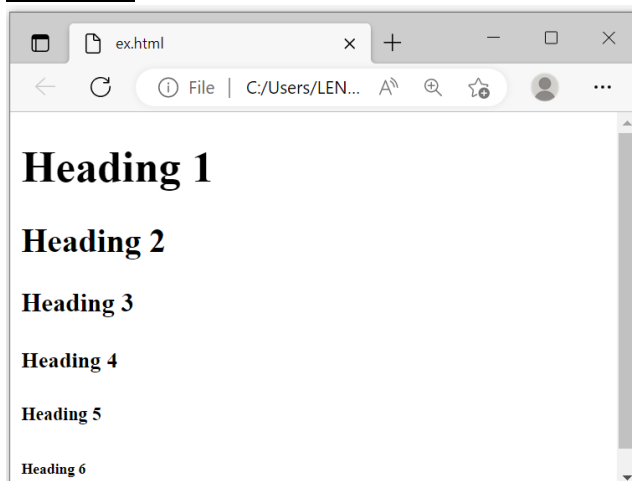
HTML Headings

HTML headings are titles or subtitles that you want to display on a webpage.

HTML headings are defined with the <h1> to <h6> tags.

<h1> defines the most important heading. <h6> defines the least important heading.

Example

```
<!DOCTYPE html>
<html>
<body>
<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>
</body>
</html>
```
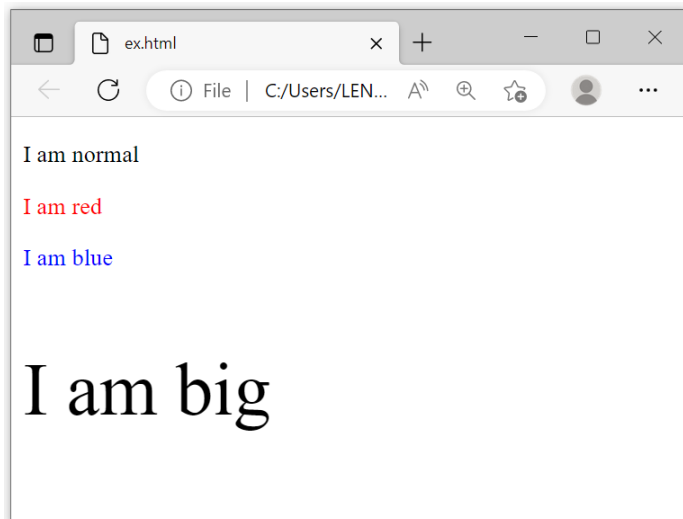
OUTPUT

HTML Styles

The HTML style attribute is used to add styles to an element, such as color, font, size, and more.

Example:

```
<!DOCTYPE html>
<html>
<body>
<p>I am normal</p>
<p style="color:red;">I am red</p>
<p style="color:blue;">I am blue</p>
<p style="font-size:50px;">I am big</p>
</body>
</html>
```

OUTPUT

Background Color

The CSS background-color property defines the background color for an HTML element.

Example:

```
<!DOCTYPE html>
<html>
<body style="background-color:powderblue;">
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

<u>OUTPUT</u>

Text Color

The CSS color property defines the text color for an HTML element

Example:

```
<!DOCTYPE html>
<html>
<body>
<h1 style="color:blue;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>
</body>
</html>
```
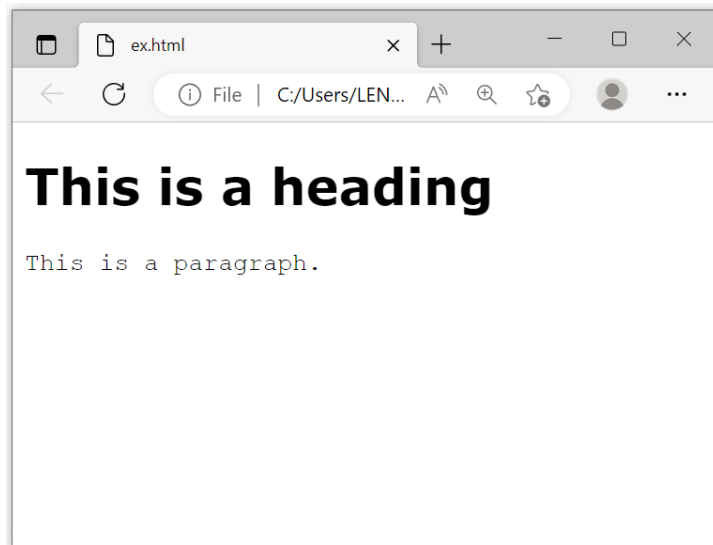
<u>OUTPUT</u>

Fonts

The CSS font-family property defines the font to be used for an HTML element

Example:

```
<!DOCTYPE html>
<html>
<body>
<h1 style="font-family:verdana;">This is a heading</h1>
<p style="font-family:courier;">This is a paragraph.</p>
</body>
</html>
```
OUTPUT

Text Alignment

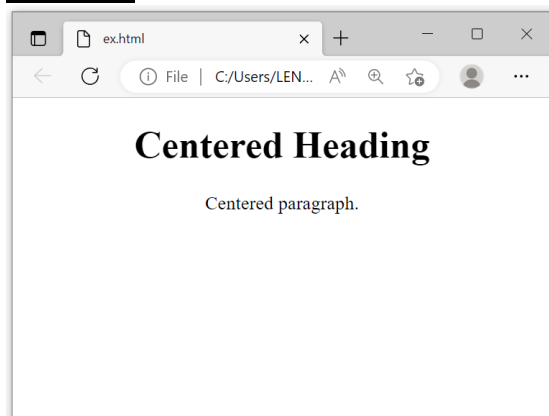The CSS text-align property defines the horizontal text alignment for an HTML element

Example:

```
<!DOCTYPE html>
<html>
<body>
<h1 style="text-align:center;">Centered Heading</h1>
<p style="text-align:center;">Centered paragraph.</p>
</body>
</html>
```
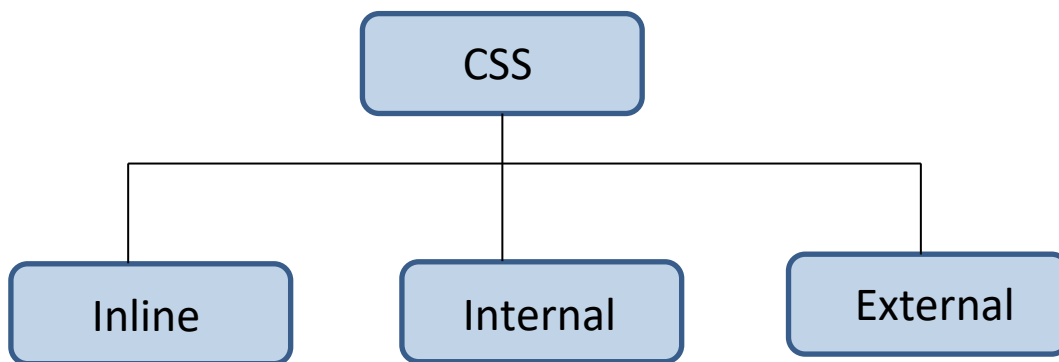OUTPUT

HTML CSS

CSS stands for Cascading Style Sheets.

CSS saves a lot of work. It can control the layout of multiple web pages all at once.

What is CSS?

Cascading Style Sheets (CSS) is used to format the layout of a webpage.

With CSS, you can control the color, font, the size of text, the spacing between elements, how elements are positioned and laid out, what background images or background colors are to be used, different displays for different devices and screen sizes, and much more!

Inline CSS

An inline CSS is used to apply a unique style to a single HTML element.
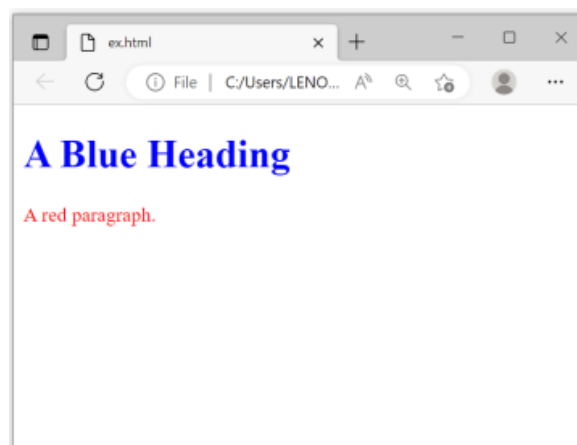
An inline CSS uses the style attribute of an HTML element.

The following example sets the text color of the <h1> element to blue, and the text color of the <p> element to red

Ex:

```
<!DOCTYPE html>
<html>
<body>
<h1 style="color:blue;">A Blue Heading</h1>
<p style="color:red;">A red paragraph.</p>
</body>
</html>
```

OUTPUT

Internal CSS

An internal CSS is used to define a style for a single HTML page.
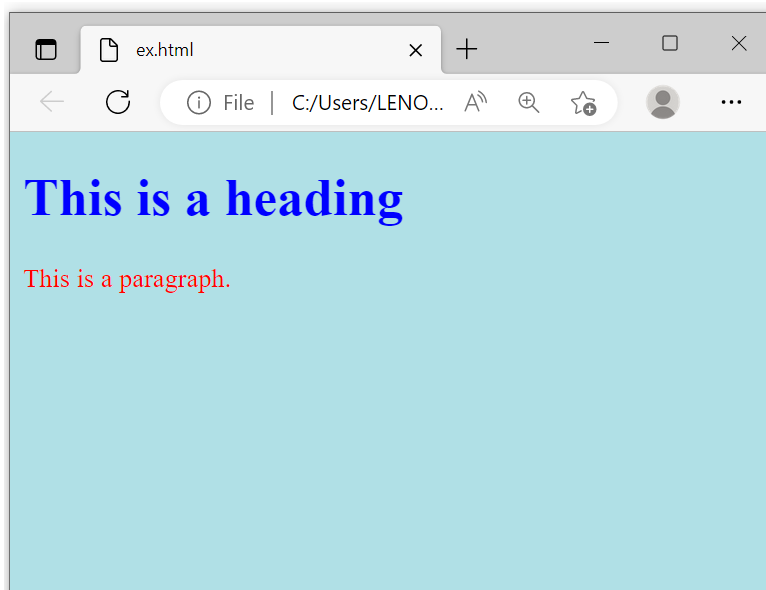An internal CSS is defined in the <head> section of an HTML page, within
a <style> element.
The following example sets the text color of ALL the <h1> elements (on that
page) to blue, and the text color of ALL the <p> elements to red. In addition, the
page will be displayed with a "powderblue" background color
Ex:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1   {color: blue;}
p    {color: red;}
</style>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

OUTPUT

External CSS

An external style sheet is used to define the style for many HTML pages.
To use an external style sheet, add a link to it in the <head> section of each
HTML page
Ex:
<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>

The external style sheet can be written in any text editor. The file must not
contain any HTML code, and must be saved with a .css extension.

“style.css”
body {
  background-color: powderblue;
}
h1 {
  color: blue;
}
p {
  color: red;
}

Tip: With an external style sheet, you can change the look of an entire
web site, by changing one file

HTML Links

HTML links are hyperlinks.

You can click on a link and jump to another document.

When you move the mouse over a link, the mouse arrow will turn into a little hand.

Note: A link does not have to be text. A link can be an image or any other HTML element

Syntax

The HTML <a> tag defines a hyperlink. It has the following syntax:

link text

The most important attribute of the <a> element is the href attribute, which indicates the link's destination.

The *link text* is the part that will be visible to the reader.

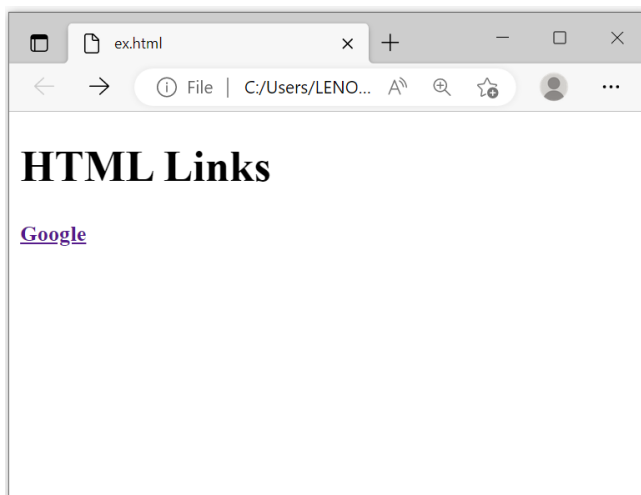Clicking on the link text, will send the reader to the specified URL address.

Ex:

```
<!DOCTYPE html>
<html>
<body>
<h1>HTML Links</h1>
<p><a href="https://www.google.com/">Google</a></p>
</body>
</html>
```

OUTPUT

The target Attribute

By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.

The target attribute specifies where to open the linked document.

The target attribute can have one of the following values

- _self - Default. Opens the document in the same window/tab as it was clicked
- _blank - Opens the document in a new window or tab
- _parent - Opens the document in the parent frame
- _top - Opens the document in the full body of the window

Ex:<!DOCTYPE html>

```
<html>
<body>
<h1>HTML Links</h1>
<a href="https://www.google.com/" target="_blank"><b>Google</b></a>
</body>
</html>
```

Link Colors

An HTML link is displayed in a different color depending on whether it has been visited, is unvisited, or is active.
By default, a link will appear like this (in all browsers):

- An unvisited link is underlined and blue
- A visited link is underlined and purple
- An active link is underlined and red

Link Buttons

A link can also be styled as a button, by using CSS
Ex:
```
<!DOCTYPE html>
<html>
<head>
<style>
a:link, a:visited {
  background-color: #f44336;
  color: white;
  padding: 15px 25px;
  text-align: center;
  text-decoration: none;
  display: inline-block;
}

a:hover, a:active {
  background-color: red;
}
```
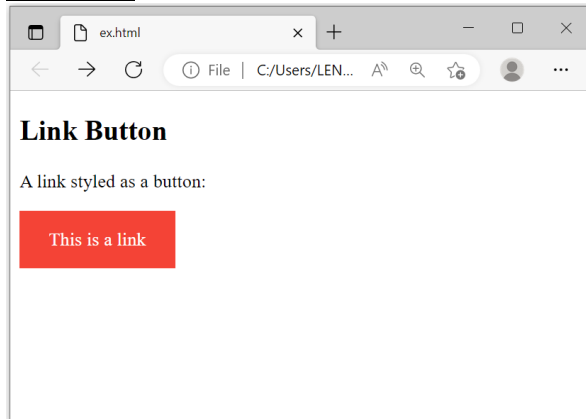
```
</style>
</head>
<body>
<h2>Link Button</h2>
<p>A link styled as a button:</p>
<a href="default.asp" target="_blank">This is a link</a>
</body>
</html>
```
OUTPUT

HTML Bookmarks

Bookmarks can be useful if a web page is very long.

To create a bookmark - first create the bookmark, then add a link to it.

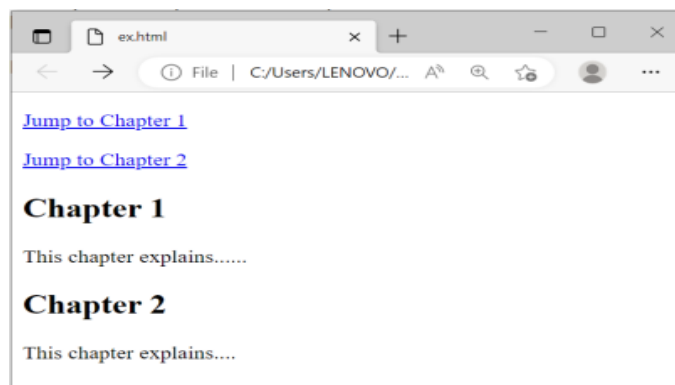When the link is clicked, the page will scroll down or up to the location with the bookmark.

Ex:

```
<!DOCTYPE html>
<html>
<body>
<p><a href="#C1">Jump to Chapter 1</a></p>
<p><a href="#C2">Jump to Chapter 2</a></p>
<h2>Chapter 1</h2>
<p>This chapter explains …….</p>
<h2>Chapter 2</h2>
<p>This chapter explains …….</p>
</body>
</html>
```
OUTPUT

HTML Tables

HTML tables allow web developers to arrange data into rows and columns.

```
<!DOCTYPE html>
<html>
<head>
<style>
table {
  font-family: arial, sans-serif;
  border-collapse: collapse;
  width: 100%;
}

td, th {
  border: 1px solid #dddddd;
  text-align: left;
  padding: 8px;
}
tr:nth-child(even) {
  background-color: #dddddd;
}
</style>
</head>
<body>
<h2>HTML Table</h2>
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
  <tr>
    <td>Ernst Handel</td>
    <td>Roland Mendel</td>
```
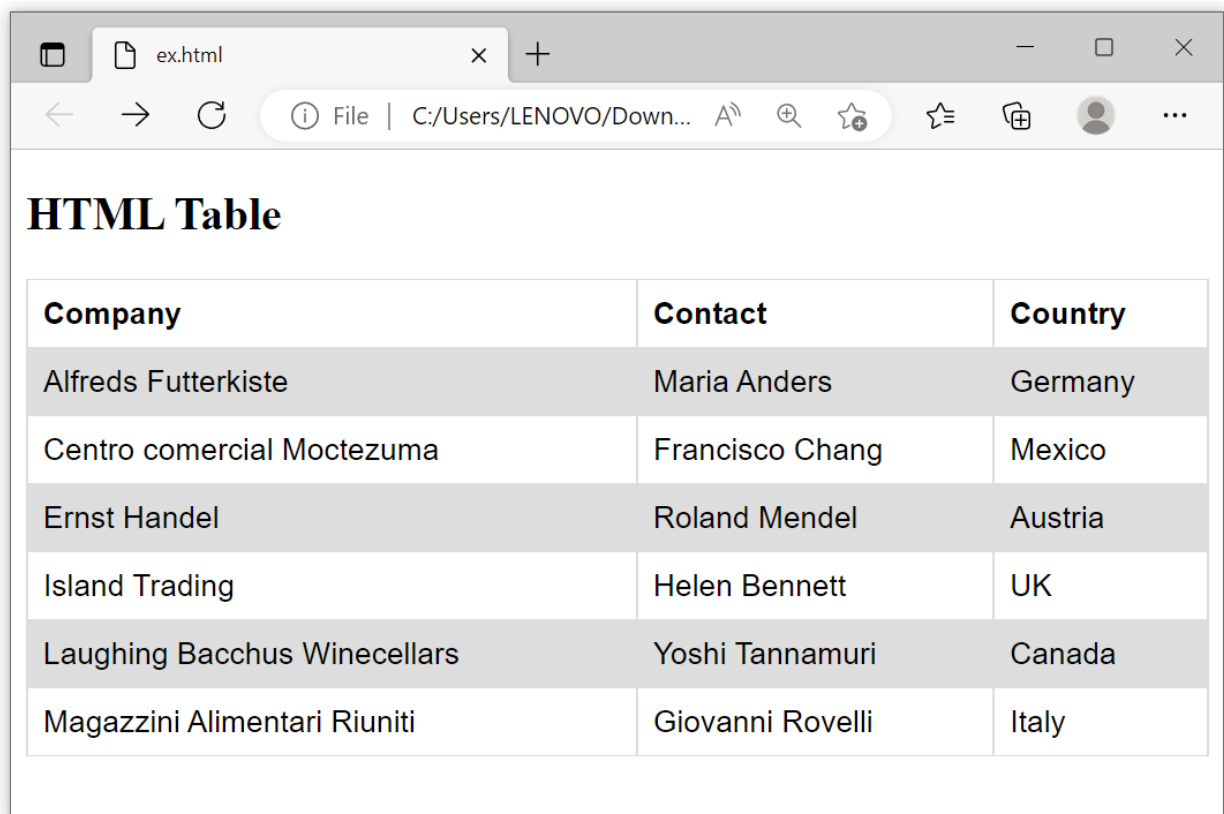
```
      <td>Austria</td>
   </tr>
   <tr>
    <td>Island Trading</td>
    <td>Helen Bennett</td>
    <td>UK</td>
   </tr>
   <tr>
    <td>Laughing Bacchus Winecellars</td>
    <td>Yoshi Tannamuri</td>
    <td>Canada</td>
   </tr>
   <tr>
    <td>Magazzini Alimentari Riuniti</td>
    <td>Giovanni Rovelli</td>
    <td>Italy</td>
   </tr>
</table>
</body>
</html>
```
OUTPUT

HTML Table

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico
Ernst Handel	Roland Mendel	Austria
Island Trading	Helen Bennett	UK
Laughing Bacchus Winecellars	Yoshi Tannamuri	Canada
Magazzini Alimentari Riuniti	Giovanni Rovelli	Italy